

REMARKS

In the Final Office Action dated December 3, 2008, the Examiner posited several formal and substantive rejections. Applicant is prepared to amend the claims to comply with all or most of these issues, but believes a more critical issue is independent of most of those identified by the Examiner. Applicant respectfully requests reconsideration of that point.

Specifically, the Examiner's "substantive" rejections were all based at least in part on the Graves reference. The Examiner rejected Claims 2, 5, 6, 43-47, 49, and 50 under 35 USC §102(e) as allegedly being anticipated by Graves, and Claims 3, 7, 48, and 51-53 under 35 USC §103(a) as allegedly being unpatentable over Graves in view of Fochler. Applicant respectfully requests reconsideration of the use of Graves in this regard. With all due respect, the Examiner's comments on pages 5-6 of the Office Action are not sufficient to carry the Patent Office's burden to show that Graves sufficiently anticipates the invention now claimed by Applicant. That deficiency is a direct consequence of the insufficiencies of the Graves patent in that regard.

Applicant respectfully requests the opportunity to further review this point with the Examiner and his supervisor, prior to putting Applicant and the Patent Office to the expense of an appeal and/or further prosecution filings.

Among other things, Applicant respectfully points out that despite the Examiner's assertions to the contrary, Graves' female and male joint structures 35 and 36 have dissimilar size and shape (see Graves Figures 2, 4, 6, 8, and 9). Graves specifically teaches that his female and male joint sections have unlike diameters at column 8, lines 11-13: "the valleys 35 are of greater axial height and greater diameter than the axial height and diameter of the valleys 36" *Emphasis added*. Graves further qualifies the dissimilar diameters as an essential component

creating a nesting relationship between sections of his device: “a cylindrical wall portion 49 of each smaller valley 36 (FIG. 6) will telescopically seat within the remaining portion of the wall portion 39 of the larger valley 35 resulting in the telescopic nested supported relationship” (col. 8, lines 24-46). In other words, Graves does not teach or make obvious Applicant’s diametrically similar male and female joint portions wherein the female portion must be temporarily deformed in order to receive the male portion (see, for example, pending Claim 43), since Graves merely teaches joining a larger diameter female portion 35 with a smaller diameter male portion 36. Indeed, it does not appear that the Grave’s joint can be interpreted in any other way. This does not teach or disclose the apparatus defined by Applicant’s currently pending Claim 43, including:

“a female flange portion at one end of the pipe section, said female flange comprising a portion of a rung including the rung’s central portion, said female flange configured to receive a **similarly sized and shaped** rung element on the end of a similar second pipe section.”
Emphasis added

Among other things, and as discussed above, Graves does not teach joining together similarly sized and shaped joint portions, but rather joining together a large female joint portion 35 with a small male joint portion 36 (i.e., joint sections that are not similarly sized and shaped). Applicant respectfully submits that Graves does not anticipate or make obvious Applicant’s invention since Graves does not teach joining together like joint portions (i.e., large joint portion 35 with a similar large joint portion 35, or small joint portion 36 with a similar small joint portion 36). In addition, although Applicant respectfully submits that his pipe sections do have a generally repeating sinusoidal pattern along their lengths, of most importance is the fact that Applicant’s male and female joining/engagement portions are similarly sized and similarly shaped, thus distinguishing Applicant’s joints from Graves’ conventional bell and spigot joint.

Further in that regard, Applicant respectfully submits that even though Graves does not teach joining together similarly sized and shaped joint portions, Applicant's invention could in fact be practiced on Graves' device (even though Graves does not disclose or make obvious this alternative). As shown in Figures 1 and 2 below, similar sized and shaped joint portions of Graves' device (i.e., large joint portion 35 to large joint portion 35 or small joint portion 36 to small joint portion 36) can only be joined together when the "female" joint portion is temporarily deformed (which Applicant respectfully submits is not taught by Graves, as discussed further below).

In those Figures 1 and 2:

- Steps 1,2) sections 1 and 2 are placed together so that "male" joint portions M of section 1 and diametrically equal "female" joint portions F of section 2 are aligned;
- Step 3) "female" joint portions F of section 2 are temporarily deformed/stretched in the direction of the arrows in order to permit the insertion of the diametrically equal "male" joint portions M of section 1; and
- Step 4) section 1 is inserted into section 2 and the "female" joint portions F of section 2 return towards their original non-deformed configuration and provide sufficient compressive force to grip the "male" joint portions M and prevent their inadvertent removal from engagement with the "female" joint portions.

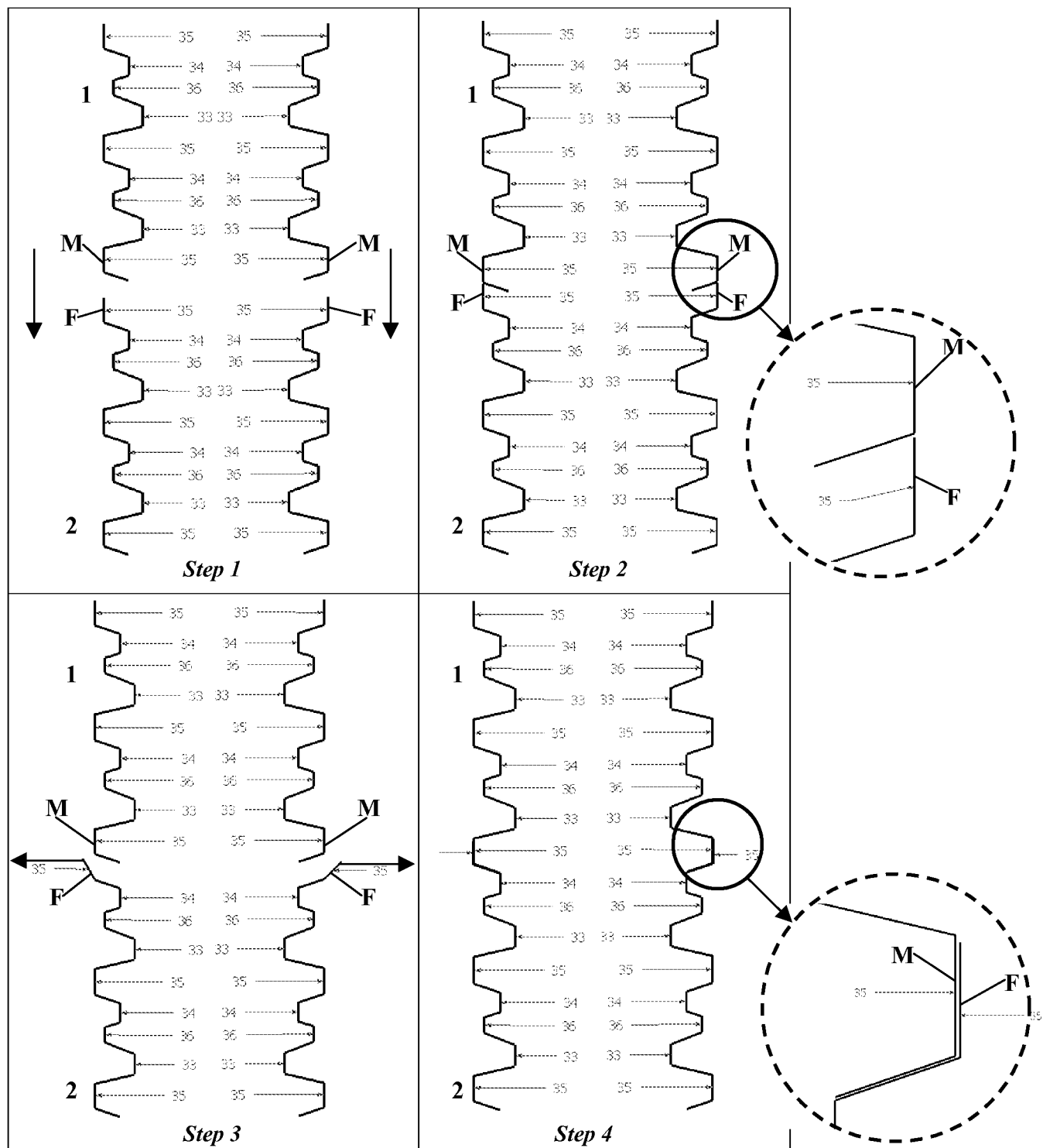


Figure 1: Schematic joining Graves' large joint portion 35 to large joint portion 35

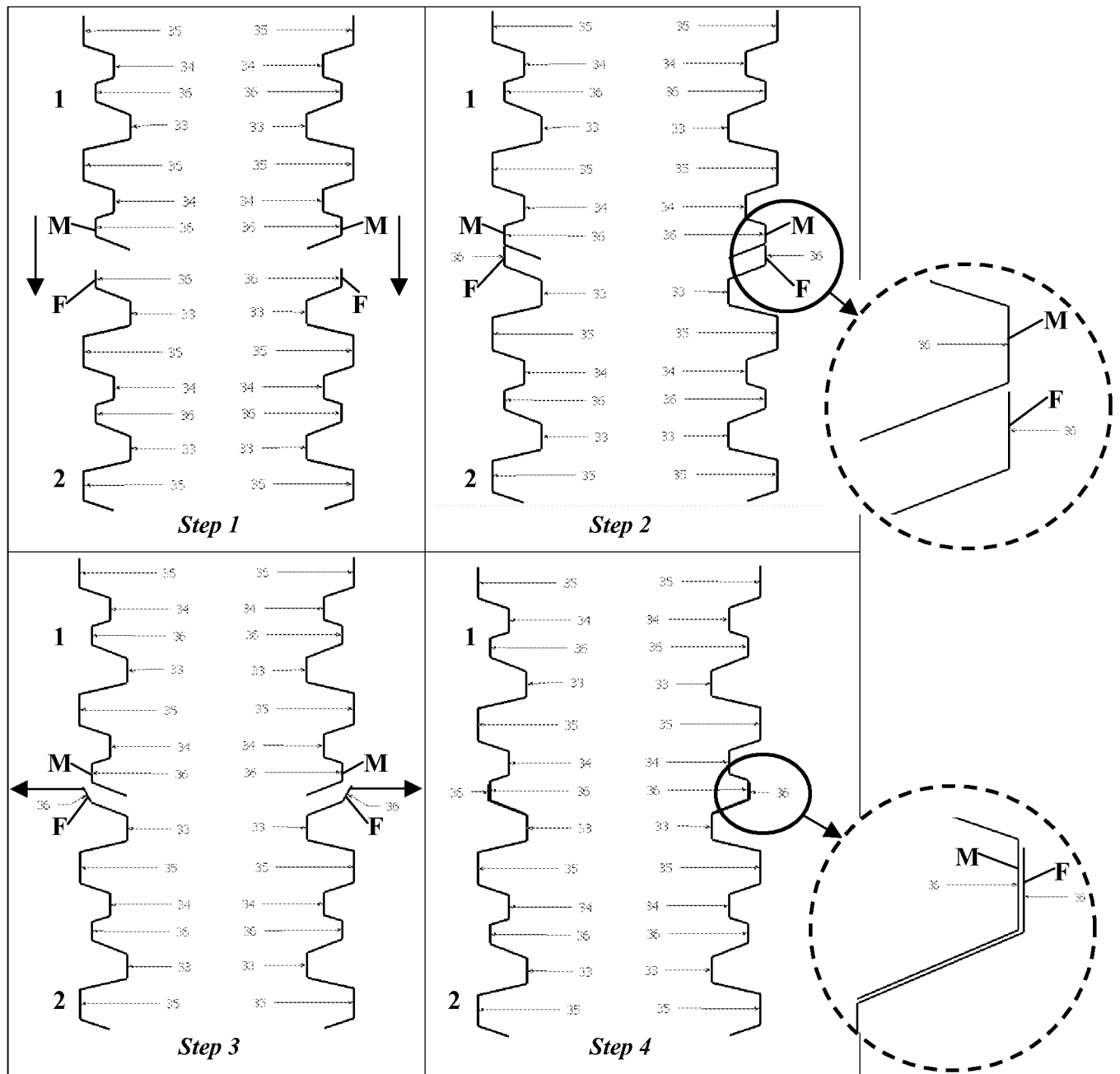


Figure 2: Schematic joining Graves' small joint portion 36 to small joint portion 36

As mentioned above, Applicant respectfully submits that Graves does not teach or make obvious joint portions capable of being temporarily deformed as alleged by the Examiner on page 11 of the Office Action, and certainly does not teach or make obvious a joint between similar

sized/shaped rung elements. Applicant respectfully submits that the material of Applicant's device is specifically selected for its required temporary deformation and shape memory properties. Applicant's original disclosure states at page 1, par. 1: "the pipe is made of material that has a "shape memory" that permits slight temporary deformation of the pipe". Nowhere in Graves does he disclose or suggest selecting a material requiring these properties. Further, since Graves teaches joining together diametrically dissimilar joint portions, there is no incentive to provide material with temporary deformation and shape memory properties as larger joint portions readily fit over smaller joint portions.

Further in that regard, Applicant respectfully submits that in the claims the ability of the female engagement portions of Applicant's device to temporarily deform is not intended to be steps in a method, but rather inherent properties of the apparatus. Among other things, the material of the apparatus must be temporarily deformed in order to join together similar sized and similar shaped engagement portions. In addition, the apparatus must have shape memory qualities to return towards its non-deformed configuration in order to hold together the similar sized and similar shaped engagement portions "with sufficient compressive force to grip the male structure", as required in at least Applicant's Claims 2 and 50. Thus, Applicant respectfully submits that his invention is directed to an apparatus and NOT a method of forming, and it appears that the Examiner's comments in that regard are moot.

Further, Applicant respectfully notes that, although the Examiner asserts (in the Office Action at page 5) that Graves contains a "repeating" sinusoidal pattern, it appears that Graves' alleged "repeating pattern" is not consistent with the "repeating" aspect asserted by the Examiner.

As shown above, it appears that Graves' large "valley" 35 and "rib" 34 are repeated out of sequence, thus interrupting the alleged "repeating axial sequence" as disclosed in Graves' description. In any case, even if Graves pattern *were* in fact consistent with his textual description of same (which Applicant respectfully submits it is not), Graves does not anticipate or render obvious Applicant's joint formed from similar sized and shaped male/female elements.

In addition to and independently of the other points in these remarks, Applicant further respectfully requests reconsideration of the Examiner's rejections of at least Applicant's pending Claims 49 and 50 (and any claims depending therefrom). Applicant respectfully submits that, similarly to the points above regarding Claim 43, the Examiner's reliance on Graves is not well-founded with regard to the claims' limitations of "similarly sized and shaped" elements.

More specifically, Applicant's currently pending Claim 49 includes the following language:

"a generally sinusoidal pattern of alternating similarly-shaped and similarly-sized (a) rung elements and (b) valley portions; said valley portions generally spacing said rung elements from one another longitudinally with respect to the pipe section's longitudinal axis"

Applicant's currently pending Claim 50 includes the following language:

"a generally sinusoidal pattern of alternating similarly-shaped and similarly-sized (a) rung elements and (b) valley portions"

Thus, both those claims require a "pattern of alternating similarly-shaped and similarly-sized (a) rung elements and (b) valley portions." As noted above, Graves discloses and makes obvious at most a series of VARYING sized and shaped rungs and valleys. Above, Applicant has addressed the issue of whether Graves' rungs and valleys are even a "repeating pattern" at all, but in any case, Graves' rungs and valleys are NOT a "pattern of alternating SIMILARLY-shaped

and SIMILARLY-sized" rungs and valleys (emphasis added). In other words, Graves' discloses the complicated and/or even random interspersing of (a) large and small rungs and (b) large and small valleys (see above). Thus, Applicant respectfully submits that Graves cannot be said to teach or make obvious Applicant's claimed "similarly" sized and shaped rungs and valleys.

Further in that regard, Applicant has set forth below proposed claim language within new Claim 54 which sets forth another way to define Applicant's similar sized and similar shaped engagement portions. Although the Office Action was designated as "final", Applicant respectfully believes that the circumstances and equities of this particular application (including, among other things, the Examiner's misinterpretation of the claims) support a further consideration by the Examiner of the materials herein, as well as the opportunity to amend the claims as shown below. Applicant respectfully submits that the currently pending claims, with or without the amendments below, should be allowed.

Accordingly, Applicant respectfully submits that at least Claims 43, 49, and 50 (and all the claims depending therefrom) are in condition for allowance as currently pending, notice whereof is respectfully requested of the Examiner.

In addition, the Commissioner is hereby authorized to charge payment of the following fees during the pendency of this application or credit any overpayment to Deposit Account No. 08-2624:

- Any additional filing fees required under 37 CFR §1.16;
- Any patent application processing fees under 37 CFR §1.17;
- Any filing fees under 37 CFR §1.16 for presentation of extra claims.

If the Examiner would like to discuss any remaining or new issues regarding this communication, the Examiner is invited to contact the undersigned representative of Applicant at (949) 718-6750.

Respectfully submitted,

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